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RECENT LITERATURE.

Packard, on the Inheritance of Acquired Characters.¹—

The time has not yet come for deciding the question which is the nearer right, the neo-Lamarckian or the neo-Darwinian school. Both have their arguments to advance and both find facts not easily to be explained by theories of the other. Yet, to us, it seems that a portion of the difficulties seem to lie in language rather than in views, and that not a little of the confusion is one of words. What Professor Packard has to say must necessarily attract attention, and, while not attempting to criticise his article as a whole, the reviewer would point out that apparently our author has been troubled by Weismann's terminology, and does not clearly appreciate the limitations placed by the Freiburg zoologist upon the expressions acquired characters, congenital variation and the like. Thus (p. 345) Packard quotes the experiments of Paul Bert upon *Daphniæ*, in which the adults were killed with salt water while the eggs in the brood-sac survived, as "a case in favor of the neo-Lamarckian principle," by which we suppose him to mean that the young inherited an acquired character before the parents had acquired it!

Again (p. 339), we read, "If congenital characters are the only ones which can be inherited, they must have, in the beginning, originated from those acquired during the lifetime of the individual, or, if not in the first, in the second or third, or a later generation." Here the answer is easy, the word "acquired" is used with a significance totally different from its limitation by Weismann, and it is upon this misuse of terms that our author is led into this later inquiry, "If there were no such thing as the transmission of characters, either anatomical, physiological or mental, originating during the lifetime of an organism, how should we have any evolution resulting in the different groups of organisms?" It is, it seems to us, this confusion of words which is at the bottom of Professor Packard's trouble. We think that a careful reading of Weismann's "*Ueber die Zahl der Richtungskörper und über ihre Bedeutung für die Vererbung* (1887)," will show one easy way out of this difficulty; whether it be the right one or not, we are not ready to say.

¹ On the inheritance of acquired characters in animals with a complete metamorphosis. *Proc. Am. Acad. Arts and Sciences*, XXIX, pp. 331-370, 1894.

In another place, Dr. Packard quotes the fact that Bacteria can be altered by changed environment, but has not Weismann pointed out that the unicellular forms stand upon an entirely different basis from the many-celled species, and that acquired characters must be transmitted among them? Aside from some features like this, Professor Packard's paper must be regarded as a strong presentation of the neo-Lamarekian position.

Proceedings of the Indiana Academy of Science for 1893.—

Among the foremost of the State scientific organizations is the Indiana Academy of Science, the third volume of whose Proceedings is before us. Of its 274 pages, 70 are occupied by the papers read at the annual meeting in the holidays a year ago, among which especially noticeable are the presidential address of Dr. J. C. Arthur upon "The Special Senses of Plants;" E. W. Olive's paper on the "Histology of the Pontederiaceae," and Professor Eigenmann's "Effect of Environment on the mass of Local Species." More important than these is the account of the work outlined and that already done towards a Natural History² Survey of the State. Necessarily, the matter presented is preliminary; a getting together of bibliographies and lists of species, but so enthusiastically has the beginning been made, that we doubt not that in a few years the whole Natural History of the State will be adequately understood. For many years Indiana has maintained a so-called geological and natural history survey, but so thoroughly has this been dominated by politics that but little good has been accomplished by it. One geologist would scarcely get the harness on when a new election would put a new person in the office, a condition which has been fatal to any definite policy. But worst of all has been the fact that nominations, for many years past, have been controlled by party pull, fitness for the position not being at all essential. The result has been that since the days of Cox and Collett, the office has been occupied by persons who, no matter how estimable they may be, are unknown to the world of science, and their reports have been scarcely more than a waste of so much good paper. This year it is true, the standard has again been raised, but this is but one of the accidents of a thoroughly pernicious method. The next election is apt to replace the present incumbent by one as ill adapted for the place as some of his predecessors.

²Although it includes Geology, the Survey is throughout spoken of as the "Biological Survey."